CONTENTS, Volume 34

Number 1, March 1988

Activity analysis in forest planning ..... *G. L. Paredes V. and J. D. Brodie* 3

Reproductive mode and mechanisms for self-replacement of northern red oak (*Quercus rubra*)—a review ..... *T. R. Crowe* 19

Changes in loblolly pine seedling root growth potential, dry weight, and dormancy during cold storage ..... *L. E. DeWald and P. P. Feret* 41

Ontogenetic factors of CO2 exchange of *Quercus rubra* L. leaves during three flushes of shoot growth I. Median flush leaves ..... *P. J. Hanson, J. G. Isebrands, R. E. Dickson, and R. K. Dixon* 55

Ontogenetic factors of CO2 exchange of *Quercus rubra* L. leaves during three flushes of shoot growth II. Insertion gradients of leaf photosynthesis ..... *P. J. Hanson, J. G. Isebrands, R. E. Dickson, and R. K. Dixon* 69

Site preparation effects on soil moisture and available nutrients in a pine plantation in the Florida flatwoods ..... *J. A. Burger and W. L. Pritchett* 77

Short-run actual and least-cost productivities of variable inputs for the British Columbia interior softwood lumber industry ..... *J. K. Meil, B. K. Singh, and J. C. Nautiyal* 88

Effect of natural inbreeding on variance structure in tests of wind-pollination Douglas-fir progenies ..... *F. C. Sorenson and T. L. White* 102

An ecological climatic classification of Michigan: A quantitative approach ..... *S. R. Denton and B. V. Barnes* 119

Hybridization of the California firs ..... *W. B. Critchfield* 139

Estimating nitrogen lost from forest floor during prescribed fires in Douglas-fir/western hemlock clearcuts ..... *S. N. Little and J. L. Ohmann* 152

Height growth rate of Douglas-fir: A comparison of model forms ..... *D. W. Hann and M. W. Ritchie* 165

Trends in wood quality for the British Columbia coast and the United States, Pacific Northwest, Westside ..... *L. F. Constantino and D. Haley* 176

Modeling long-term fire-caused mortality of Douglas-fir ..... *K. C. Ryan, D. L. Peterson, and E. D. Reinhardt* 190

NOTES

Genetic variation in leaf morphology and plant and tissue water relations during drought in *Cercis canadensis* L. ..... *M. D. Abrams* 200

A reevaluation of the Wagon Wheel Gap forest watershed experiment ..... *B. P. Van Haveren* 208

Effects of light intensity and temperature on the growth of Douglas-fir and incense-cedar seedlings ..... *D. Minore* 215

Use and characteristics of snags in young and old forest stands in southwest Virginia ..... *D. K. Rosenberg, J. D. Fraser, and D. F. Stauffer* 224

Effects of aerial detection schedules on the age of southern pine beetle infestations ..... *J. E. de Steiguer and R. L. Hedden* 229

Selecting foliage and growth variables for relating insect defoliation to coniferous tree growth ..... *T. J. Nichols* 236

Determining investment-efficient diameter distributions for uneven-aged northern hardwoods ..... *B. B. Bare and D. Opalach* 243

BOOK REVIEWS

The microbiology of terrestrial ecosystems ..... *reviewed by D. D. Myrold* 250

Host management in crop pathosystems ..... *reviewed by C. Lee Campbell* 251

Growing exotic forests ..... *reviewed by P. Felker* 252

CONTENTS, Volume 34

Number 1, March 1988

Activity analysis in forest planning ..... *G. L. Paredes V. and J. D. Brodie* 3

Reproductive mode and mechanisms for self-replacement of northern red oak (*Quercus rubra*)—a review ..... *T. R. Crowe* 19

Changes in loblolly pine seedling root growth potential, dry weight, and dormancy during cold storage ..... *L. E. DeWald and P. P. Feret* 41

Ontogenetic factors of CO2 exchange of *Quercus rubra* L. leaves during three flushes of shoot growth I. Median flush leaves ..... *P. J. Hanson, J. G. Isebrands, R. E. Dickson, and R. K. Dixon* 55

Ontogenetic factors of CO2 exchange of *Quercus rubra* L. leaves during three flushes of shoot growth II. Insertion gradients of leaf photosynthesis ..... *P. J. Hanson, J. G. Isebrands, R. E. Dickson, and R. K. Dixon* 69

Site preparation effects on soil moisture and available nutrients in a pine plantation in the Florida flatwoods ..... *J. A. Burger and W. L. Pritchett* 77

Short-run actual and least-cost productivities of variable inputs for the British Columbia interior softwood lumber industry ..... *J. K. Meil, B. K. Singh, and J. C. Nautiyal* 88

Effect of natural inbreeding on variance structure in tests of wind-pollination Douglas-fir progenies ..... *F. C. Sorenson and T. L. White* 102

An ecological climatic classification of Michigan: A quantitative approach ..... *S. R. Denton and B. V. Barnes* 119

Hybridization of the California firs ..... *W. B. Critchfield* 139

Estimating nitrogen lost from forest floor during prescribed fires in Douglas-fir/western hemlock clearcuts ..... *S. N. Little and J. L. Ohmann* 152

Height growth rate of Douglas-fir: A comparison of model forms ..... *D. W. Hann and M. W. Ritchie* 165

Trends in wood quality for the British Columbia coast and the United States, Pacific Northwest, Westside ..... *L. F. Constantino and D. Haley* 176

Modeling long-term fire-caused mortality of Douglas-fir ..... *K. C. Ryan, D. L. Peterson, and E. D. Reinhardt* 190

NOTES

Genetic variation in leaf morphology and plant and tissue water relations during drought in *Cercis canadensis* L. ..... *M. D. Abrams* 200

A reevaluation of the Wagon Wheel Gap forest watershed experiment ..... *B. P. Van Haveren* 208

Effects of light intensity and temperature on the growth of Douglas-fir and incense-cedar seedlings ..... *D. Minore* 215

Use and characteristics of snags in young and old forest stands in southwest Virginia ..... *D. K. Rosenberg, J. D. Fraser, and D. F. Stauffer* 224

Effects of aerial detection schedules on the age of southern pine beetle infestations ..... *J. E. de Steiguer and R. L. Hedden* 229

Selecting foliage and growth variables for relating insect defoliation to coniferous tree growth ..... *T. J. Nichols* 236

Determining investment-efficient diameter distributions for uneven-aged northern hardwoods ..... *B. B. Bare and D. Opalach* 243

BOOK REVIEWS

The microbiology of terrestrial ecosystems ..... *reviewed by D. D. Myrold* 250

Host management in crop pathosystems ..... *reviewed by C. Lee Campbell* 251

Growing exotic forests ..... *reviewed by P. Felker* 252

Number 2, June 1988

Classification of airborne multispectral scanner data for mapping current defoliation caused by the spruce budworm ..... *D. G. Leckie and D. P. Ostaff* 259

A discrete state, continuous parameter Markov process approach to timber harvesting systems analysis ... *C. C. Hassler, R. R. Disney, and S. A. Sinclair* 276

The influence of soil moisture on Eucalyptus leaf litter moisture ..... *T. J. Hatton, N. R. Viney, E. A. Catchpole, and N. J. de Mestre* 292

Accuracy testing and estimation alternatives ..... *T. G. Gregoire and M. R. Reynolds* 302

A framework for stand structure projection of uneven-aged loblolly-shortleaf pine stands ..... *P. A. Murphy and R. M. Farrar, Jr.* 321

Influence of *ceanothus velutinus* and associated forbs on the water stress and stemwood production of Douglas-fir ..... *T. D. Petersen, M. Newton, and S. M. Zedaker* 333

Effects of timber harvest on stream chemistry and dissolved nutrient losses in northeast Oregon ... *A. R. Tiedemann, T. M. Quigley, and T. D. Anderson* 344

Timber harvesting with fluctuating prices ..... *R. Brazee and R. Mendelsohn* 359

Goodness-of-fit tests and model selection procedures for diameter distribution models ..... *M. R. Reynolds, Jr., T. E. Burk, and W-C Huang* 373

Optimum age for family selection for growth in genetic tests of loblolly pine ..... *S. E. McKeand* 400

Effects of whole-tree and stem-only clearcutting on posthar[illegible]st hydrologic losses, nutrient capital, and regrowth ..... *L. K. Mann, D. W. Johnson, D. C. West, D. W. Cole, J. W. Hornbeck, C. W. Martin, H. Riekerk, C. T. Smith, W. T. Swank, L. M. Tritton, and D. H. Van Lear* 412

Dwarf mistletoe on western white pine and whitebark pine in northern California and southern Oregon ..... *R. L. Mathiasen and F. G. Hawksworth* 429

A stochastic efficiency approach for determining the economic rotation of a forest stand ..... *J. P. Caulfield* 441

Growth and survival modeling for planted conifers in the Great Lakes Region ..... *K. L. Belli and A. R. Ek* 458

Multiple use vs. organizational commitment ..... *B. W. Twight and F. J. Lyden* 474

Physiological and morphological responses of three half-sib families of loblolly pine to water-stress conditioning ..... *J. R. Seiler and J. D. Johnson* 487

The relationship between western spruce budworm defoliation levels and growth of individual Douglas-fir and grand fir trees ..... *T. J. Nichols* 496

NOTES

Merchantable height in lieu of total height in stem profile equations ..... *J. H. Fowler and J. C. Rennie* 505

Conditioning a segmented stem profile model for two diameter measurements ..... *R. L. Czaplewski and J. P. McClure* 512

Measuring foliar flammability with the Limiting Oxygen Index method ..... *E. H. T. Mak* 523

Effects of crown expansion into gaps on evaluation of disturbance intensity in northern hardwood forests ..... *L. E. Frelich and G. L. Martin* 530

BOOK REVIEW

Plant hormones and their role in plant growth and development ..... *Reviewed by C. H. Michler* 537

Manuscript reviewers, 1987 538

Number 3, September 1988

Leaf area, stemwood growth, and nutrition relationships in loblolly pine ..... *J. M. Vose and H. Lee Allen* 547

Patterns of leaf area distribution within crowns of nitrogen- and phosphorous-fertilized loblolly pine trees ..... *J. M. Vose* 564

Use of stochastic production coefficients in linear programming models: Objective function distribution, feasibility, and dual activities ..... *J. B. Pickens and P. E. Dress* 574

Allelopathic effects of shrubs of the sand pine scrub on pines and grasses of the sandhills ..... *D. R. Richardson and G. B. Williamson* 592

Predicted and actual capacity changes in the pulp and paper industries of developed market economies: A test of rational expectations ..... *J. Buongiorno and P. Calmels* 606

The effect of eccentricity on the estimation of basal area and basal area increment of coniferous trees ..... *G. S. Biging and L. C. Wensel* 621

Optimization with expected values of random yield coefficients in renewable resource linear programming .. *J. G. Hof, K. S. Robinson, and D. R. Betters* 634

A Markov chain model for evaluating seasonal forest fire fighter requirements .. *D. Boychuk and D. L. Martell* 647

Three-dimensional forest growth model relating tree size, tree number, and stand age: Relation to previous growth models and to self-thinning ..... *G. McFadden and C. D. Oliver* 662

Volume estimation from sample tree counts with certain individual tree volume equations ..... *T. B. Lynch* 667

Predicting fertilizer response of loblolly pine using foliar and needle-fall nutrients samples in different seasons ..... *R. C. McNeil, R. Lea, R. Ballard, and H. Lee Allen* 698

On the economic value of genetic progress in forestry ..... *K.-G. Löfgren* 708

Three-dimensional representation of Douglas-fir volume growth: Comparison of growth and yield models with stand data ... *K. L. O'Hara and C. D. Oliver* 724

Root decomposition and nutrient flux following whole-tree harvest of northern hardwood forest ..... *T. J. Fahey, J. W. Hughes, M. Pu, and M. A. Arthur* 744

Analysis of forest fertilizer experiments: Obtaining better precision and extracting more information ..... *R. C. Woollons and A. G. D. White* 769

NOTES

Cross-dating cores as a nondestructive method for dating living, scarred trees ..... *P. R. Sheppard, J. E. Means, and J. P. Lassoie* 781

A forestry application of Schnute's generalized growth function ..... *B. V. Bredenkamp and T. Gregoire* 790

Specific gravity variation in a loblolly pine seed source study in the western Gulf region ..... *T. D. Byram and W. J. Lowe* 798

A stand table projection approach to yield prediction in unthinned even-aged stands ..... *L. V. Pienaar and W. M. Harrison* 804

Sample sizes and estimation methods for the Weibull distribution for unthinned slash pine plantation diameter distributions ..... *B. D. Shiver* 809

The stock market's reaction to timberland ownership restructuring announcements: A note ..... *F. Christian Zinkhan* 815

BOOK REVIEWS

Natural resource policy and income distribution .... *reviewed by J. Sullivan* 820

Insect outbreaks ..... *reviewed by M. E. Montgomery* 821

Three volumes on Surinamese forest ecology ..... *reviewed by F. E. Putz* 822

Number 4, December 1988

Mathematical analysis and modeling of epidemics of rubber tree root diseases: Probability of infection of an individual tree ..... *J. Chadoeuf, H. Joannes, D. Nandris, and J. C. Pierrat* 831

Forest inventory and management-based visual preference models of southern pine stands ..... *V. A. Rudis, J. H. Gramman, E. J. Ruddell, and J. M. Westphal* 846

Modeling tree growth potential based on effective evapotranspiration ..... *A. Wickramasinghe* 864

A method to estimate input-output multipliers for the forestry sector without an I–O table ..... *C. Zheng and P. A. Harou* 882

The ratio of shoot silhouette area to total needle area in Scots pine ..... *P. Oker-Blom and H. Smolander* 894

A height prediction model with random stand and tree parameters: An alternative to traditional site index methods ..... *J. Lappi and R. L. Bailey* 907

Minimum age-to-age correlations in early selections ..... *S. Magnussen* 928

Relationship between volume and biomass of early successional vegetation and the prediction of loblolly pine seedling growth ..... *S. V. Byrne and T. R. Wentworth* 939

Stochastic representation of fire occurrence in a wildland fire protection model for California ..... *J. S. Fried and J. K. Gilless* 948

Species composition and diversity during secondary succession of coniferous forests in the western Cascade Mountains of Oregon ..... *P. Schoonmaker and A. McKee* 960

A statistical model of root geometry ..... *T. H. Wu, D. P. Bettadapurra, and P. E. Beal* 980

Relationships between fuel properties and slashburning-induced nutrient losses ..... *M. C. Feller* 998

Growth response of green and white ash seedlings to ozone, sulfur dioxide, and simulated acid rain ..... *A. H. Chappelka, B. I. Chevone, and T. E. Burk* 1016

Sources of variation in osmotic potentials with special reference to North American tree species ..... *M. D. Abrams* 1030

Stand structure in subalpine forests of Yosemite National Park, California ..... *A. J. Parker* 1047

NOTES

Stratification of seeds of western and Utah Juniper ..... *J. A. Young, R. A. Evans, J. D. Budy, and D. E. Palmquist* 1059

Variation of stem rust resistance in a lodgepole pine provenance-family plantation ..... *A. Yanchuk, F. C. Yeh, and B. Dancik* 1067

Heritability, age-age correlations, and inferences regarding juvenile selection in Jack pine ..... *D. E. Riemenschneider* 1076

Hazard rating forest sites for pine tip moth, *Rhyacionia* spp., in the upper Piedmont plateau ..... *W. M. Hood, R. L. Hedden, and C. W. Berisford* 1083

Growth of whiteleaf manzanita (*Arctostaphylos viscida* Parry) ..... *D. Minore, H. G. Weatherly, and J. E. Means* 1094

1988 Index 1101

1988 Contents 1106